



SHORTAGES
of
HEALTH PROFESSIONALS
in
RURAL AREAS
A Look at Virginia

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Introduction



This information is intended as a resource for those who need to understand how adequately the population of Virginia is served by health care professionals and how that supply of health providers is distributed throughout the state. It may also serve as a template for assessing other states.

These Virginia maps and statistical tables illustrate a wide disparity within the Commonwealth in the supply of health professionals with people living in rural areas being significantly underserved.

Major Findings



Using data from the 2000 Census, the number of health professionals in the civilian labor force for the State of Virginia was identified, as were specific types of general and mental health professionals. The population census for Virginia in 2000 was 7,078,515. Rates of availability of health professionals per 10,000 census were determined to facilitate comparisons among types of professionals and to facilitate comparisons with other states.

Overall, there were 99,210 health professionals in the labor force in Virginia in 2000. This reflects a rate of 140.2 health professionals per 10,000 census.

Seventy-four percent of the health professional workforce was female. Eighty-two percent were white, 5.6% were black, 5.6% were Asian, 0.2% were American Indian/Alaskan Native. About 1.3% reported two or more races. Less than one percent (0.7%) reported being of Hispanic ethnicity.

There were 24.4 physicians, 5.3 dentists, 78.4 registered nurses, 24.3 licensed practical nurses, 1.7 physician assistants and 51.5 health care aides per 10,000 census in 2000 in Virginia.

There were 5.4 psychologists, 22.9 counselors, 17.4 social workers, and 15.0 clergy per 10,000 census in 2000 in Virginia.

Variation in the Rate of Health Professionals

Thirty-eight percent of the variation in the rate of health professionals to 10,000 census is explained by the characteristics of the counties and independent cities in Virginia.

- The larger the percent of rural population in a county, the lower the availability of health professionals.
- Counties with higher per capita income have higher availability of health professionals.
- The higher the percent of Black and Hispanic populations, the lower the availability of health professionals.



After controlling for the percent of rural population, the per capita income and the percent of Asian, Black and Hispanic populations, the number of hospitals nor the number of physicians in a county were significant in explaining the availability of health professionals.

Overall, communities that have lower incomes and higher percentages of minority populations have fewer health professionals.

This lack of providers is being further explored in an ongoing study to explain any influence of continued disparities in health outcomes for poor and/or minority populations.

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County Census Information

Data Sources: Area Resources File

Terminology: Uses Census Bureau Definition of Rural;
Uses Primary Care Provider Data
Reported in Area Resources File

Organization of Tables

Links to Tables: (all three tables are on the same file)

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Table 2 - Virginia Counties' Census, Rurality and Availability of Primary Care Providers Sorted by Department of Agriculture's Urban/Rural Classification

Table 3 - Virginia Counties' Census, Rurality and Availability of Primary Care Providers Sorted by Percent Rural Population in County

Virginia Healthcare Provider Information

Data Sources: Census Bureau, EEO Files

Terminology: Labor Force includes Civilians Working or Available to Work

Organization of Tables

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Virginia Maps Showing County Boundaries

Data Sources: Area Resources File

Terminology

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Links to Maps:

[Distribution of Rural Areas in Virginia, 2000](#)

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[Hospitals and Nursing Homes in 2000, per 10,000](#)

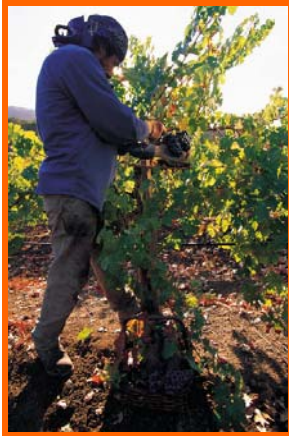
[population](#)

[Number of Psychiatrists in 2000, per 10,000 population](#)

[Number of Psychologists in 1990, per 10,000 population](#)

[Number of Social Workers in 1990, per 10,000 population](#)

County Census Information



The figures in Tables 1-3 are drawn from:

- U.S. Census 2000 Data
- Department of Agriculture Urban/Rural Classification (<http://www.ers.usda.gov/briefing/rurality/RuralUrbCon/priordescription.htm>)
- AMA Physician Masterfile (<http://www.ama-assn.org/ama/pub/category/2673.html>)
- State Licensure Data collected by the American Academy of Nurse Practitioners (<http://www.aanp.org/Default.asp>)

TERMINOLOGY

- Counties** The data is presented separately for counties and for independent cities. For example, Charlottesville is an independent city, while Albemarle County, which surrounds it, is listed separately.
- Rural Class** The U. S. Department of Agriculture has developed a 0-9 Urban/Rural Classification system, with 0 indicating the most urban area and 9 the most rural.
- % Rural** Indicates the percentage of a county's total population residing in a rural area. (For example, of the 38,414 people who live in Accomack County, 90% of them live in a rural area. Their Rural Class is 7).
- HPSAPC** This stands for "Health Professional Shortage Area-Primary Care" and refers to the system established by the U.S. Health Resources and Services Administration to target areas in need of specific means to increase their access to health care. A designation of "0" indicates no shortage of primary care providers, a "1" means the entire county is affected by a shortage, and "2" shows a partial shortage in the county.
- MD and NP Rates** In addition to indicating total numbers of doctors and nurse practitioners, the tables show how many of each category there are per 10,000 people.

ORGANIZATION OF TABLES



Table 1 is sorted by **County**, in alphabetical order, and shows each county's total population, its Rural Class, the percentage of the population that resides in a rural area, its HPSAPC designation, the numbers of doctors and nurse practitioners and how many there are in each category per 10,000 population.



Table 2 is sorted by **Urban/Rural Class** (Department of Agriculture system) in ascending order, beginning with the least rural areas. Counties are in alphabetical order within classification.

Table 3 is sorted by **Percentage of Rural Population** in each county in ascending order from least rural to most rural.

LINKS TO TABLES

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Virginia Healthcare Provider Information



The figures in all these tables are drawn from the Census 2000 EEO file; AREA Resources File.

In addition to showing the numbers and rate per 10,000 population for various providers, the tables (except Tables 1 and 2) also identify the gender and racial percentages within each provider category. This information relates to issues of culturally relevant health care.

TERMINOLOGY

- County Sets** County sets are combinations of either independent cities with their adjacent counties or combinations of sparsely populated adjacent counties. The combinations are made to achieve statistically meaningful numbers and/or to preserve some degree of anonymity in the analysis of patient statistics (for example, suicide) when those are reported.
- NH/PI** This Census category refers to people who are Native Hawaiians or Other Pacific Islanders.
- AIAN** This Census category refers to people who are American Indians or Alaska Natives.
- Hispanics** This term, as employed by the U.S. Census, refers to individuals who report being Hispanic, regardless of race.

ORGANIZATION OF TABLES



Table 1 summarizes Virginia statewide numbers of healthcare providers in the categories of General Health (Dentists, Physicians and Surgeons, Physician Assistants, Registered Nurses, Licensed Practical and Licensed Vocational Nurses), Mental Health (Psychologists, Counselors, Social Workers) and Other (Clergy and Nursing, Psychiatric, and Home Health Aides). It provides for each category both the raw numbers and the rate per 10,000 population, as of the 2000 Census. In addition, it gives the Census Detailed Occupation Code for each profession.



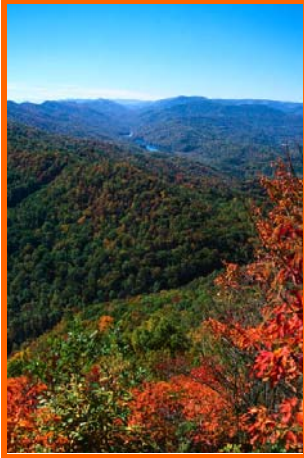
Table 2 shows overall Virginia numbers of healthcare providers by provider type within County sets. It is a fine-tuning of the same data shown in Table 1.

Remaining tables show provider demographic categories by County Sets. Each table gives the number and rate/10,000 population and the percentage of female providers. In addition, Census racial statistics provide the percentages of white, black, Asian, Native Hawaiian/Other Pacific Islander, American Indian/Alaska Native, those of two races, those of more than two races, and the percentage of Hispanic providers.

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Virginia Maps Showing County Boundaries



Colorful Virginia maps supplement information provided in the Tables and dramatically depict an uneven distribution of healthcare providers throughout the Commonwealth. Some maps graphically illustrate the same information found on a Table; in other instances, the map shows data from a different time period or for different providers than those listed in the Tables. All gender and racial distribution information is drawn from the 2000 Census.

TERMINOLOGY

Full Time Equivalent Nurse A full time equivalent nurse is a Registered Nurse who is employed (not just licensed) full time in health care. Nurses who report working only part time or for only part of the reporting year are counted as .5 FTEs. (Health Resources and Services Administration – HRSA)

ORGANIZATION OF MAPS



The first map shows the distribution of rural areas throughout Virginia. All other maps illustrate either the distribution of minority populations or the distribution of healthcare providers. Not every category listed in the Tables is represented by a map. Categories not shown on the Tables, but with a map representation, include: chiropractors, psychiatrists, and nurse practitioners. Maps show the numbers of psychologists and social workers per 10,000 as reported in 1990, the latest year of this data available for counties. Most maps include data from the year 2000; occasionally the data was not available for 2000, but was available for 2001 and that data was used.



[LINKS TO MAPS](#)

[Distribution of Rural Areas in Virginia, 2000](#)

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[Number of Social Workers in 1990, per 10,000 population](#)